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MISSOURI RIVER BASIN INVESTIGATIONS

PRELIMINARY LAND PLANNING AND CLASSIFICATION REPORT of the Public Domain Lands

in

MARIAS RIVER AREA MONTANA

Region III
Billings, Montana
February, 1949

(FOR ADMINISTRATIVE USE ONLY)

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s report was compiled as part of the program of the Department of the erior for the development of the resources of the Missouri River Basin

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ACKNOWLEDGEMENTS

The sources of the information contained in this report were from bulletins, maps and other published material of the Bureau of Reclamation, Soil Conservation Service, Forest Service, U. S. Indian Service, Production and Marketing Administration and U. S. Geological Survey. Aerial photographs of the Production and Marketing Administration, covering the public domain lands in the area, were of particular assistance. Much information was obtained through interviews with county officers, oil companies and their representatives and local residents.

The field reconnaissance was accomplished by L. A. Merryfield, Range Conservationist, who with the assistance of J. Elliott Hall, Land Economist, assembled the data and prepared the report. The accompanying map was prepared under the direction of William C. Anderson, Engineering Draftsman and the overall study was under the supervision of R. D. Nielson, Land Economist in Charge of Missouri Basin Studies, Region III, Bureau of Land Management, Billings, Montana.

PURPOSE AND SCOPE

This preliminary report presents an analysis of the physical and economic factors of the Marias River Area, particularly as they relate to the public domain lands under the administration of the Bureau of Land Management and as a phase of the overall Missouri River Development program. Sufficient information is assembled from available outside sources as well as some field studies and surveys of the Bureau to point-up specific problems and subdivide the basin into those units or sub-areas which require separate and more detailed studies in the forming of a sound program plan for the proper management, use or disposition of the public domain lands in the area, which would be consistent with the comprehensive resource development plan for the Missouri River Basin. A more detailed study will then be made and a report prepared discribing the use suitability of each individual tract of public domain land in the area.

SUMMARY

The Marias River area includes all of the land within the Marias River drainage and a small portion of the Milk River drainage in northeastern Hill County. It embraces all of Hill, Liberty, Toole, Glacier and Pondera Counties and the northern portions of Teton and Chouteau Counties. There are approximately 7,500,000 acres of land within the area. The Marias River flows through a narrow alluvial valley, bordered by rough and broken lands throughout most of its length. The lands are generally rough and steep in the western part of the area and level to rolling in the eastern portion.

The economy of the area is based primarily upon stockraising and farming. In 1945, the value of crops produced in the area was about twice the value of the livestock produced. Approximately 70 percent of the lands within the area, including a small amount of waste and barren lands, are devoted to grazing use. The remaining 30 percent are devoted to crop production, of which about 26 percent are dry-farmed. Most of the important oil fields in Montana are located within the area including the Cut Bank, Sunburst and Kevin fields. These and the smaller fields produced 100,792,788 barrels of crude oil through 1945.

There are approximately 139,000 acres of public land within the Marias River area or about two percent of the total acreage of the entire area. Preliminary studies indicate these lands are primarily valuable for grazing, watershed protection, wildlife conservation and recreation. Over one-half of the public domain is located within the following sub-areas or units: (1) Wild Horse Lake, (2) Lost River, (3) Loma, (4) Sweet Grass Hills, (5) Sunburst-Kevin, (6) Marias River and, (7) Birch Creek. These sub-areas have been delineated on the basis of the acreage and relatively consolidated pattern of public land within their boundaries. The remaining public land in the area, consisting of about 65,000 acres lies in small and scattered tracts throughout the area.

Preliminary analysis and field reconnaissance indicates more detailed studies are necessary within the above areas to properly classify the public lands and their resources and ascertain their place and relationship to the overall development programs in the area. These studies will determine the value or significance of these lands for watershed, grazing, wildlife and recreational uses. Those public lands, outside of the sub-areas are generally grazing lands and primarily valuable for use in connection with privately owned lands. However, detailed examination of each tract is necessary to determine whether the lands are needed in connection with any public land program and if not, appraise each parcel in order that they can be disposed of at public sale.

The Tiber dam, proposed by the Bureau of Reclamation, will be located near Chester, Montana. The reservoir will have a storage capacity of 915,000 acre feet from which it is planned to irrigate 120,000 acres. The effect of this development upon the public domain lands cannot be definitely determined without more detailed studies.

PHYSICAL FEATURES

Location and Size

The Marias River area is located in Northwestern Montana and embraces all of Hill, Liberty, Toole, Glacier and Pondera Counties, and the northern part of Teton and Chouteau Counties (See attached map). There are approximately 8,000,000 acres of land within the area. It includes the drainage of the Marias River from the point where it enters the Missouri River at Loma, Montana to its source in the Rocky Mountains west of Browning, Montana. A small part of the Milk River drainage in northeastern Hill County is also included in this report.

Drainage

The total length of the Marias River drainage including Cut Bank Creek is approximately 210 miles with an average width of 65 miles. The river is formed in the southeastern part of Glacier County by the confluence of Dry Fork of the Marias River, Two Medicine and Cut Bank Creeks. Other important drainages of the Marias River are: Willow, Trail and Cottonwood Creeks from the north, and Pondera, Dead Indian and Dugout Creeks from the south. The part of the Milk River included in this report is located in the northeastern part of Hill County and includes the drainage of Sage Creek from the North and Big Sandy Creek from the south.

Topography

The topography ranges from the rough steep areas on the eastern slope of the Rocky Mountains, which include a part of the Glacier National Park and the Lewis and Clark National Forest to the rolling prairies and wheat lands through Toole, Liberty and Hill Counties. The Marias River flows through a narrow alluvial valley which is bordered by rough badland from south of Loma to Shelby, Montana.

The Sweet Grass Hills lie in the north central part of this area, along the boundary line of Liberty and Toole County. They are an isolated group and consist of a number of prominent buttes on the rolling topography of the great plains.

Physiography

The most prominent physiographic features of the central part of this area are the Sweet Grass Hills whose steep granite buttes can be seen for many miles in every direction. The larger part of the Marias River area is characterized by the rough steep badlands around Loma and east to Kinread. The west boundary is bordered by the Continential Divide with its lofty peaks, steep canyons and numerous streams and lakes.

Elevations range from 2,750 feet above sea level near Loma, Montana, to 8,776 feet on Mount Summit at the head of Two Medicine and Cut Bank Creeks. The northern plains of Montana occupy a part of the great continential slope known as the Great Plains which stretches from the foothills of the Rocky Mountains eastward toward the Mississippi valley. The surface relief, for

the most part, is characterized by smooth, tabular divides, separated by stream valleys and appear to be almost flat. However, it has a slight inclination to the east. The average slope along the Great Northern Railway from Browning, Montana, to Mondak on the Montana-Dakota line, is nearly eight feet to the mile.

Geology

The entire area has been covered with extensive surficial deposits which are chiefly glacial, however, the character of the surface geology has been greatly altered by erosion, deposition, extrusions and intrusions. The northeastern corner of the area, along Milk River, is still covered with glacial drift with a few intrudions of Colorado and Claggett shales. The most extensive surface formations found in the area are the Judith River, Colorado, Claggett and Sundance.

It is in the area of the Colorado shales and Two Medicine formations in Toole and Glacier Counties, that the Northern Montana Oil Fields of Cut Bank, Kevin and Sunburst are found. The land in Northern Montana was eroded to nearly its present form before the glacial era and has been little changed by the ice age. The depth of the drift deposited on the area varies greatly. On the high tablelands this material ranges from 25 to 50 feet in depth while in some glacial valleys and depressions this filled-in material may be over 100 feet in depth. The main divide of the Rocky Mountains was a collecting ground for glaciers during the time of the Keewatin ice sheet. The damming of the Mountain valleys by this ice sheet formed the many lakes in Glacier, Pondera and Toole Counties. These lake deposits formed some of the most important irrigation sections of the area.

Climate

This area lies west of the 105th meridian and is rather typical of other semi-arid regions of the west. The average annual precipitation of the area is 12.41 inches, 9.68 inches of which falls during the growing season from April to September. The average length of the frost free period is slightly over 118 days. The minimum temperature recorded for this area is 57 degrees below zero at Havre, Montana, and the maximum is 108 degrees recorded at the same city. Due to the lack of any mountain barriers on the north, cold winds blowing in from the extensive prairies of Canada are, in part, responsible for a rather extreme climate all along the Canadian line and extending to the Missouri River. Some of the coldest temperatures in the United States are recorded at Popular, Glasgow, Malta, Havre, Great Falls, Shelby, Chester, Cut Bank and Browning. The rigorous climate limits the land use in this area to the production of small grains, hay and native forage plants. Heavy snow storms, blizzards and prolonged cold spells make it necessary to provide shelter for livestock and to keep sufficient supplementary livestock feed on hand to take care of all livestock during the emergency periods.

Natural Vegetative Cover

This area is characterized by the short grass type of vegetation. The principal specie are blue grama, niggerwool, Western wheat grass, slender wheat grass, June grass, several specie of blue grass and in the sandy area and the "badlands", small patches of sand grass and red grass. Along the creeks and in the valleys are found several specie of sage, some shrubs, chokecherry, service berry, buckbrush and wild rose. Poplar trees are found along the Marias River and its tributaries. Many evergreens: Western

yellow pine, lodgepole pine, limber pine, Douglas fir, and juniper are found in the Sweet Grass Hills and their foothills, and in the mountainous areas in Glacier, Toole and Pondera Counties. Juniper and a few scattered yellow pines are also found in the badlands areas.

Soils

The soils of the Marias River area, on the basis of those features which determine their use or possible use for agricultural purposes, may be arranged in three groups as follows: (1) Farming soils, including these soils used in the production of cultivated crops, or soils naturally adapted to such use; (2) farming-grazing soils, including soils commonly known as marginal soils, soils which are partly farmed and partly grazed, or soils that are alternately cropped and grazed; and (3) grazing soils, including soils which are used almost exclusively for the production of native forage and grazing. 1/

The parent material of most of the soils in the area is glacial drift which ordinarily ranges in depth accordingly to the terrain. The agricultural use of the land is generally co-extensive with favorable topography. However, in some areas where the land is level, alkali and other unfavorable soil conditions prohibit successful cultivation or grazing. The public lands are generally rough and broken and are within the grazing soils category.

ECONOMIC AND SOCIAL FACTORS

The largest town in the area is Havre with a population of 6,500 followed by Cut Bank and Shelby with about 2,500 each, Browning with 1,900, Conrad with 1,500 and Fort Benton with 1,250. There are 64 other towns or villages under 1,000 ranging from 700 in Sunburst to 3 in Inga. Total urban population as shown in the last census is 11,474 and the total rural population is reported as 29,947, an average of 0.3 persons per square mile. The period between 1930 and 1940 showed a decrease in the population of eight percent. There has probably been a decrease in the rural population and a slight increase in the urban population during the last decade.

This area is served by the Great Northern Railroad which runs east and west through the entire project area. One branch also runs south from Havre through Big Sandy and Fort Benton to Great Falls and south. The Great Northern Railroad also operates a line north and south from Great Falls through Conrad and Shelby to Sweet Grass, where it connects with the Canadian Pacific Railway. U. S. Highways Nos. 2, 29, 89 and 91 serve the area satisfactorily connecting all the main towns and the Glacier Park area with the general network of state, county and federal roads. Public schools, public service utilities and social facilities are located at all of the larger towns and the North Montana College is located at Havre, Montana.

1/ Soil Survey (Reconnaissance) of The Northern Plains of Montana by L. F. Gieseker in charge and E. R. Morris, Montana Agricultural Experiment Station and A. T. Strahm and C. B. Manifold, U. S. Department of Agriculture.

Land Ownership and Management Programs

The public domain lands in this area total 138,824 acres or 1.75 percent of the total acreage of the entire Marias River area (See Table I). Approximately 75,000 acres or over 50 percent of this land is in relatively consolidated units referred to as the Sweet Grass Hills, Lost River, Wild Horse Lake, Birch Creek, Loma and Sunburst units. The remaining 63,824 acres consist of 638 isolated tracts ranging in size from 9 to 720 acres and are scattered throughout the entire area.

About 96 percent of the public domain land within the area is leased for grazing under the provisions of Section 15 of the Taylor Grazing Act. In addition there are 58,287 acres or 43 percent of the public domain lands under oil and gas lease and this acreage is being increased daily. Also the Department has 123,000 acres of restricted patent lands under oil and gas lease.

Improvements on the public domain to date consist of four reservoirs in Toole County, two spring developments in Hill County, one mile of fence in Toole County and 400 acres of reseeding in Pondera and Teton Counties. There are 62,876 acres of public domain lands in the area withdrawn for use in connection with proposed development program of the Bureau of Land Management. Under cooperative agreement of February 28, 1945, it was resolved that the Bureau of Reclamation, from time to time, would submit to the Bureau of Land Management lists describing lands withdrawn for reclamation purposes which are not yet needed in connection with their projects in order that the Bureau of Land Management may lease the lands for grazing purposes. To date, the Bureau of Reclamation has submitted to the Bureau of Land Management a list of withdrawn lands comprising 12,277 acres within this area.

There are 19,800 acres of Indian allotment lands in Hill County owned by the Rocky Boy and Turtle Mountain Indians. There are also 1,090,377 acres in the Blackfeet Indian Reservation in Glacier and Pondera Counties and 141,710 acres in the Rocky Boy Indian Reservation in Hill and Chouteau Counties.

The part of Glacier National Park, which lies in this area, comprises 68,533 acres. The Lewis and Clark National Forest embraces 158,502 acres of land located in Glacier, Pondera and Teton Counties.

The Fish and Wildlife Service administers the Lake Thibideau Migratory Waterfowl Refuge containing 5,920 acres and located in the eastern part of Hill County.

9,254 acres of land along Beaver Creek in Hill County have been set aside for county and city park purposes and application for patent made under Act of June 25, 1947, Public Law 106, 80th Congress. The lands are administered by the Hill County Board of Commissioners, the United States reserving the oil, gas and mineral rights.

The Kevin State Cooperative Grazing District is located in Toole County, Montana and contains a gross acreage of approximately 185,000 acres, of which 24,192 acres are public domain. There are 169,706 acres of State School lands in the area which are under the administration of the Montana State Land Board.

The lands owned by the counties have been greatly reduced by sale during the past ten years and at the last analysis in 1947, there remained some 10,000 acres in this status. This acreage has probably been considerably reduced since 1947.

Approximately five million acres or 64 percent of the area are covered by State Soil Conservation Districts. There has been no land acquired under the Bankhead-Jones Farm Tenant Act of 1937 in this area.

There are approximately six million acres of privately owned lands in this area of which two and one-half percent are irrigated; 25.5 percent in dry land crops and summer fallow and 72 percent in grazing lands including a small amount of waste and barren lands, roads, townsites, etc.

Area Economy

Stock raising and farming are the most important industries of this area both from the point of persons employed and wealth produced. According to the United States Census of Agriculture for 1945, the total value of crops produced that year was $26,687,941.00 and the total value of livestock in the area was $13,711,210.00. The number of farms was 4,317 and the average size of the farms was 2,020 acres for the same year.

Most of the important oil fields in Montana are located in this area including the Cut Bank, Sunburst and Kevin fields. There are also twenty smaller producing fields. These fields produced 100,792,788 barrels of crude oil through 1945. The largest producing field being Cut Bank with a production of 49,288,578 barrels and the smallest being 90 barrels produced by the Pondera field. There were 395 producing oil and gas wells in this area at the end of 1945. The Department of the Interior collected $43,818.94 for oil and gas royalties during 1945.

There is little evidence of any extensive coal or their mineral deposits in the area.

Irrigation projects

There are two important irrigation projects in the area, Blackfoot Irrigation Project in Glacier County and the Valier Irrigation Project near the towns of Conrad and Valier. There are 120,000 acres under irrigation in the Blackfoot project within the Indian reservation which is administered by the Indian Service. The source of water for this project is all the headwaters of the Marias River drainage, including Cut Bank, Badger and Two Medicine Creeks. The Valier irrigation project has 104,643 acres under irrigation and was developed under the provisions of the Carey Act. The waters for this project are derived from the storage reservoir created by Swift Dam and Lake Francis along Birch Creek.

The Tiber dam, proposed by the Bureau of Reclamation, located near Chester in Liberty County, Montana, will back water up the Marias River approximately 35 miles and up Willow Creek 15 miles. This reservoir will have a total storage capacity of 915,000 acre feet with an active storage of 340,000 acre feet and a dead storage of 575,000 acre feet. It is proposed to irrigate 120,000 acres from this reservoir, of this 18,000 acres will be served by pumping, 10,000 acres by return flow and the remainder by gravity ditches, according to the Reclamation plan.

The irrigable lands lie on smooth to gently rolling benches north and east of the Marias River. The highest land to be irrigated is 2,935 feet and to divert water on the land, a minimum pool level of 2,967 feet is necessary. There are no present or proposed power developments on the river. After allowances are made for ultimate upstream irrigation on Indian Reservation lands, the remainder of the flow is storable in the proposed Tiber reservoir for downstream use of the Lower Marias Unit. The Bureau of Reclamation has estimated that with storage in the proposed Tiber reservoir, sufficient water will be available for the irrigation of 110,000 acres and the return flow from 63,000 acres will be available for the irrigation of an additional 10,000 acres. Lonesome Lake, a natural depression in Northern Chouteau County will serve as a catchment basin for the return flow from 63,000 acres. A diversion 2½ miles below the outlet of this lake, to Big Sandy Canal, will serve 10,000 acres extending to within three miles of Havre, Montana. 1/

The main canal with an initial capacity of 2,250 second feet leaves the reservoir through a tunnel. The first 13½ miles to Cottonwood Creek crossing includes 21,900 feet of tunnel. Thirty-eight miles from the dam, where a branch canal drops 30 feet, a hydroelectric installation will generate power which will be transmitted six miles to a pumping plant where water is lifted into two pump canals which will serve 18,000 acres.

PROBLEMS AS RELATE TO PUBLIC LANDS

Preliminary examination and analysis indicates there are seven units or sub-areas within the Marias River Basin which require a more detailed examination to determine the proper management or disposition of the public domain lands. These areas have been more or less arbitrarily defined but do contain about on-third of the public domain land within the basin. The public domain lands within these areas do not constitute a major portion of the land ownership but within each sub-area, however, specific problems, borne out by the preliminary analysis, require further study. These sub-areas requiring further investigation are: Wild Horse Lake, Lost River, Loma, Sweet Grass Hills, Sunburst-Kevin, Marias River and Birch Creek.

Wild Horse Lake Area

This area lies in the north-central part of Hill County and contains about 12,000 acres of public land. Approximately 11,000 acres lie within the flood area of Wild Horse Lake, an ancient stream depression which had its natural outlet dammed by the glacial drift. During most of the year the lake is dry, however, during the spring drainage it will contain a maximum of four feet of water. The only known water losses from the lake are from seepage and evaporation. The principal source of water comes from Sage Creek which rises in Canada and enters near the upper end of the lake. However, there is little or no water entering the lake as the stream flow has been diverted for irrigation in Canada.

A number of small irrigation projects were maintained on the strength of the Wild Horse Lake storage water which has since been abandoned. Available information indicates that if and when the Wild Horse Lake is refilled, it may be valuable for a migratory bird refuge. In the event, the lake is not being used for water storage, studies should be made as to the feasibility of draining and reseeding the area, thus making it valuable for grazing use.

1/ Missouri River Basin, Conservation Control and Use; Senate Document 191, 78th Congress, 2nd Session, 1944.

Lost River Area

There are 2,347 acres of public domain in this area which are largely steep slopes forming "badlands". This area shows excessive erosion and desiccation of the soft sandstones and silty shales. There is considerable silt which moves out of these badlands and enters the Milk River and an effort should be made to determine if this silting and erosion could be controlled or minimized either by planting or construction projects. Preliminary analysis indicates there is need for the construction of a drift fence on the United States-Canadian boundary to facilitate the border patrol and livestock operators using public land. Some spring development work has been done by this Bureau during the past years. Further studies are necessary to determine the need for these constructions and specific plans made for their construction if such improvements are found to be feasible.

The Loma Area

This area, consists of some 8,000 acres of public domain which forms a wedge between the Marias and Teton Rivers. Part of this acreage is in the Sun River project but since it is a solid block of steeply dissected badlands which drains both to the Marias and Teton River, it was treated as a part of the Marias project. This area is a combination of badlands and tablelands. At the perimeters of these tablelands numerous steep sided, steeply dipping coulees begin. The broken-up drainage pattern of these coulees, the precipitious buttes and the over-all twisted and eroded topography make up the badlands. Further from the river, much of the tablelands are intact and are used for grain and hay crops. The coulees are progressively inching their way further into the bench lands and carrying off valuable soil which is gradually reducing the cultivated areas. This condition, if allowed to persist will destroy much valuable cropland. There is a high rate of run-off here during rains all of which enters either the Marias or the Teton River and in a few miles enters the Missouri. This silt is then carried down to the Fort Peck Reservoir. Studies should be made to determine the feasibility of constructing water spreaders at the head of coulees to protect the farm lands and to prevent further physiographic deterioration. These soils are very unstable being formed on the Colorado, Claggett and Bear Paw shales.

The Sweet Grass Hills

These hills lie in the northwest corner of Liberty County and the northwest corner of Toole County. They are isolated from other hills or mountains and consist of a number of preminent buttes. The main upthrusts are located just south of the Canadian border and are a conspicuous land mark for many miles. There are approximately 5,000 acres of public domain in this block which consists, for the most part, of steep igneous buttes, areas of exposed slide rock and granite cliffs. Part of the area is covered with thick stands of young growth, lodgepole pine and Douglas fir. There are a few mining claims in these hills. It appears, however, that their main purpose is to control the water. There are numerous springs and small streams in the hills, many of which have trout in them. It would appear that further analysis of the public lands is desirable to determine their value for a game and wildlife refuge, and recreational area, and also, to determine the validity of the unpatented mining claims. The area is also important for watershed purposes. Most of the public domain area is under grazing lease but, due to steepness of the slopes, very little grazing use is realized.

Sunburst-Kevin Area

There are some 20,000 acres in relatively solid blocks located between Sweetgrass, Montana, on the Canadian line, and the Marias River. This is in the Colorado shale and Two Medicine formations, where the Kevin, Sunburst and Cut Bank oil fields are located. The dual use of this land for grazing and oil and gas production should be carefully studied. Many of the oil operators offer strenuous objections to the interference of stock, especially sheep with their cable controlled pumping system. A large part of the public domain acreage here is in and adjacent to shallow lakes and in the rough, black nearly barren badland hills south of Sunburst. Preliminary information indicates some of these public lands would make an excellent migratory bird refuge and game range.

Marias River

The numerous and scattered tracts of public domain lands along the Marias River above the proposed Tiber dam comprise about 20,000 acres of generally rough steep badlands with sparse vegetation, mostly sage and salt sage with short grass on the small benches. Further consideration should be given to the possible retention and consolidation of public lands in order to provide public hunting, fishing and recreation. It is also important that these lands be kept well covered with vegetation to minimize erosion and the movement of silt into the proposed Tiber dam a few miles below.

Birch Creek Area

There are 8,700 acres of public lands in this area, most of which is in a relatively solid block adjacent to the Lewis and Clark National Forest and the Blackfeet Indian Reservation. Swift reservoir, a storage lake for the Valier irrigation project, joins these lands over a mile on the west. Excellent fishing is found in this reservoir, in Birch and Dupyer Creeks and in Lake Francis 20 miles east. These lands, for the most part, are very rough and mountainous and have little suitable forage available for livestock. The damage done by trailing over the rocky, shallow and unstable soils does not appear to be compensated for by the amount of forage available. There is considerable young growth of Douglas fir, ledgepole and limber pine in the mountains and some scrubby juniper is found on the rocky ledges. Birch and Dupyer Creeks and their tributaries, support a thick stand of cottonwood, aspen, willows, rose brush, buck brush and other shrubs along their banks. A preliminary investigation of the area indicates that these lands are more valuable for watershed protection, game range and recreational than for any other purpose. Further studies are necessary to determine the proper management or disposition of these public lands.

There are approximately 65,000 acres of public domain lands outside of the above described sub-areas that are scattered throughout the area. It lies in 638 isolated tracts ranging in size from 9 to 720 acres. A detailed examination and appraisal of each of these tracts is necessary to determine whether the public interests required their retention in public ownership or disposition under the public land laws. The proposed Tiber dam will provide recreational possibilities in the area and some of the public lands will be affected by its construction. Investigation should be made to determine the need for egress and ingress to the reservoir over public lands and recreation possibilities of the public land created by the construction of the dam.

The Smithsonian Institute in their report of March 1948, indicates that there are 53 sites of archeological and paleontological interest in the immediate area of the Tiber reservoir. Many of these are tipi-ring sites, stone piles and stone alignments. Many of these sites have been observed on public domain lands and it should be determined what action should be taken regarding them. The "Bison Kill" site in the SW½ of Section 22, Township 30 north, Range 4 east, is, at least in part, on public domain lands, however, these will be inundated in the event that the Tiber reservoir is constructed according to present specifications.

Submitted by _____

Title Range Conservationist

Date February 1949

APPROVED BY:

_____

Land Economist in Charge of
Missouri Basin Studies

Table 1 - Land Ownership by Counties - 1949 (acres)

MARIAS RIVER AREA

	GLACIER	TOOLE	LIBERTY	HILL	CHOUTEAU	PONDERA	TETON	TOTAL
Public Domain	2,795	57,272	15,121	30,073	21,285	10,586	1,692	138,824
Reclamation Withdrawal	-	2,360	12,795	30,401	16,840	480	-	62,876
Indian Allotments	-	-	-	19,800	-	-	-	19,800
Indian Reservations	940,919	-	-	39,750	101,960	149,458	-	1,232,087
Glacier National Park	68,533	-	-	-	-	-	-	68,533
Lewis & Clark National Forest	24,544	-	-	-	-	121,616	12,342	158,502
Wild Life Refuges	-	-	-	5,920	-	-	-	5,920
County and City Parks	-	-	-	9,254	-	-	-	9,254
Public Domain in Kevin State Grazing District	-	24,192	-	-	-	-	-	24,192
State School Lands	7,680	12,460	4,880	47,500	79,840	15,426	1,920	169,706
County Lands	480	960	1,140	5,257	1,480	600	120	10,037
Private Lands	858,409	1,160,636	899,764	1,700,197	671,543	753,354	39,066	6,078,977
TOTAL	1,903,360	1,257,880	933,700	1,884,160	892,948	1,051,520	55,140	7,978,708

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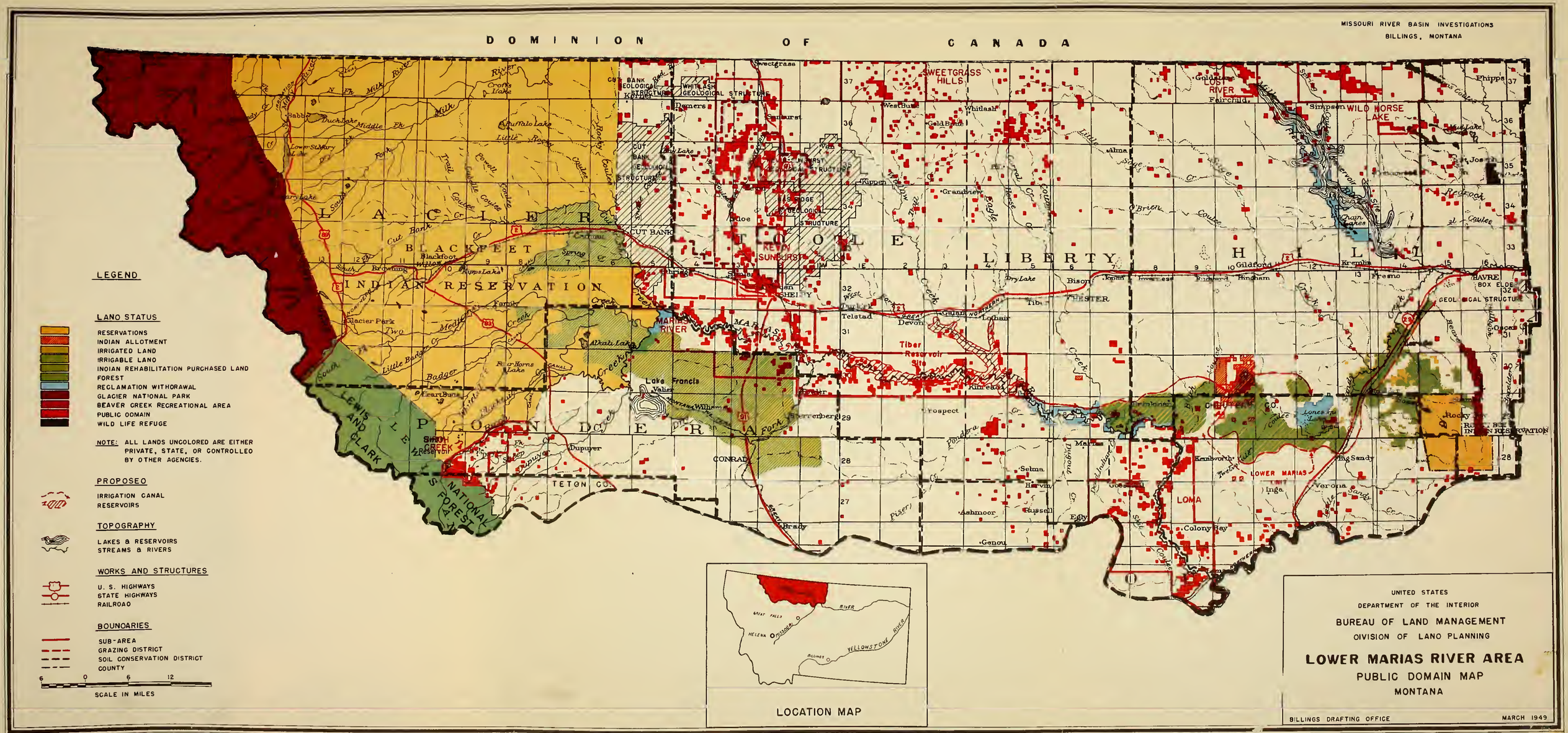
MISSOURI RIVER BASIN INVESTIGATIONS
BILLINGS, MONTANA
DOMINION OF CANADA
LEGEND
LAND STATUS
RESERVATIONS
INDIAN ALLOTMENT
IRRIGATED LAND
IRRIGABLE LAND
INDIAN REHABILITATION PURCHASED LAND
FOREST
RECLAMATION WITHDRAWAL
GLACIER NATIONAL PARK
BEAVER CREEK RECREATIONAL AREA
PUBLIC DOMAIN
WILD LIFE REFUGE
NOTE: ALL LANDS UNCOLORED ARE EITHER PRIVATE, STATE, OR CONTROLLED BY OTHER AGENCIES.
PROPOSED
IRRIGATION CANAL
RESERVOIRS
TOPOGRAPHY
LAKES & RESERVOIRS
STREAMS & RIVERS
WORKS AND STRUCTURES
U. S. HIGHWAYS
STATE HIGHWAYS
RAILROAD
BOUNDARIES
SUB-AREA
GRAZING DISTRICT
SOIL CONSERVATION DISTRICT
COUNTY
6 0 6 12
SCALE IN MILES
BLACKFEET INDIAN RESERVATION
LEWIS AND CLARK NATIONAL FOREST
SWEETGRASS HILLS
WILD HORSE LAKE
LOST RIVER
BEAVER CREEK
Tiber Reservoir Site
LOWER MARIAS
LOMA
HAVRE
BOX ELDER
CUT BANK GEOLOGICAL STRUCTURE
WHITE ASH GEOLOGICAL STRUCTURE
SHELBY
CONRAD
TETON CO.
LOCATION MAP
GREAT FALLS
HELENA
MISSOURI RIVER
YELLOWSTONE RIVER
BILLINGS
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DIVISION OF LAND PLANNING
LOWER MARIAS RIVER AREA
PUBLIC DOMAIN MAP
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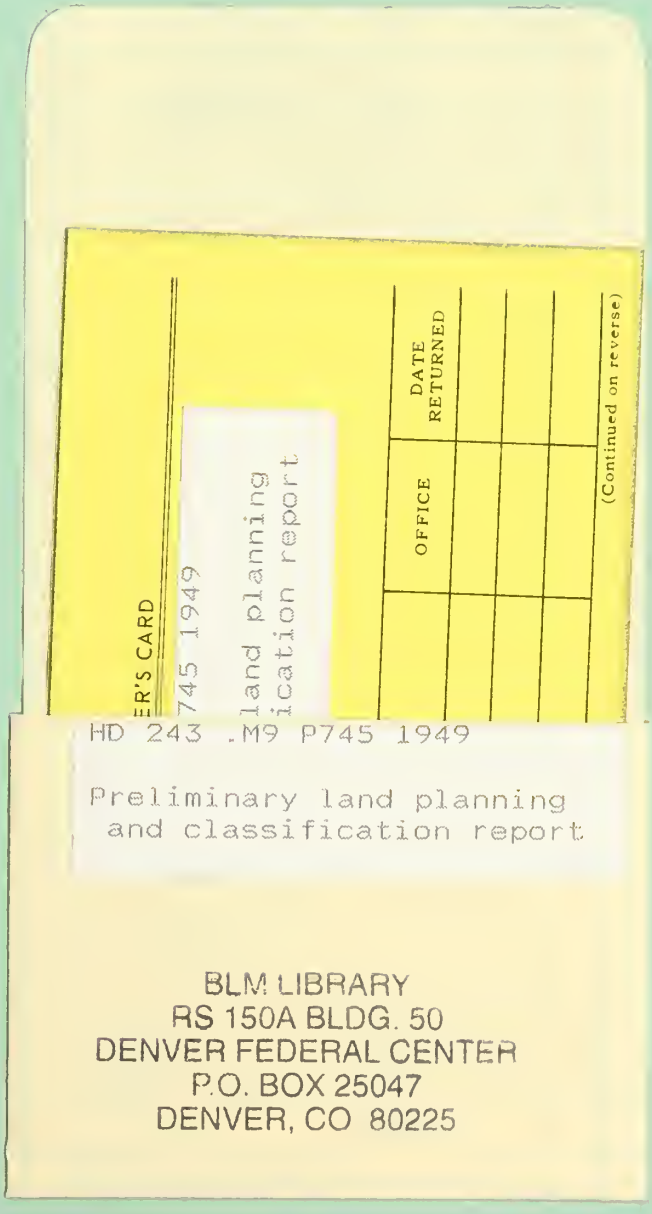

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Preliminary land planning
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